

SEQUENCE LISTING

<110> Board of Trustees for University of Arkansas

<120> Mitogen-Activated Protein Kinase and Method of Use to Enhance Biotic and Abiotic Stress Tolerance in Plants

<130> UAF-03-14

<140> 60/444,249

<141> 2004-01-31

<160> 8

<170> PatentIn version 3.2

<210> 1

<211> 1396

<212> DNA

<213> Oryza sativa

<400> 1

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MAPK5.ST25

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<210> 2
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<212> PRT
<213> Oryza sativa

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<400> 2

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Asn Lys Tyr Gln Pro Pro Ile Met Pro Ile Gly Arg Gly Ala Tyr Gly
35          40          45

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Ile Val Cys Ser Val Met Asn Phe Glu Thr Arg Glu Met Val Ala Ile
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Lys Lys Ile Ala Asn Ala Phe Asn Asn Asp Met Asp Ala Lys Arg Thr
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Leu Arg Glu Ile Lys Leu Leu Arg His Leu Asp His Glu Asn Ile Ile
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Gly Ile Arg Asp Val Ile Pro Pro Pro Ile Pro Gln Ala Phe Asn Asp
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Val Tyr Ile Ala Thr Glu Leu Met Asp Thr Asp Leu His His Ile Ile
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MAPK5.ST25

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145 150 155 160

Arg Asp Leu Lys Pro Ser Asn Leu Leu Leu Asn Ala Asn Cys Asp Leu
165 170 175

Lys Ile Cys Asp Phe Gly Leu Ala Arg Pro Ser Ser Glu Ser Asp Met
180 185 190

Met Thr Glu Tyr Val Val Thr Arg Trp Tyr Arg Ala Pro Glu Leu Leu
195 200 205

Leu Asn Ser Thr Asp Tyr Ser Ala Ala Asp Val Trp Ser Val Gly Cys
210 215 220

Ile Phe Met Glu Leu Ile Asn Arg Gln Pro Leu Phe Pro Gly Arg Asp
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His Met His Gln Met Arg Leu Ile Thr Glu Val Ile Gly Thr Pro Thr
245 250 255

Asp Asp Glu Leu Gly Phe Ile Arg Asn Glu Asp Ala Arg Lys Tyr Met
260 265 270

Arg His Leu Pro Gln Tyr Pro Arg Arg Thr Phe Ala Ser Met Phe Pro
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Arg Val Gln Pro Ala Ala Leu Asp Leu Ile Glu Arg Met Leu Thr Phe
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Asn Pro Leu Gln Arg Ile Thr Val Glu Glu Ala Leu Asp His Pro Tyr
305 310 315 320

Leu Glu Arg Leu His Asp Ile Ala Asp Glu Pro Ile Cys Leu Glu Pro
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Phe Ser Phe Asp Phe Glu Gln Lys Ala Leu Asn Glu Asp Gln Met Lys
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MAPK5.ST25

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<212> DNA
<213> Oryza sativa

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ccgtctatac ctgctttgta catatgatca agattgagag ccgggtagac tgaacattgc 960
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<210> 4
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<212> PRT
<213> Oryza sativa

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20 25 30

Thr Asn Lys Tyr Gln Pro Pro Ile Met Pro Ile Gly Arg Gly Ala Tyr
35 40 45

Gly Ile Val Cys Ser Val Met Asn Phe Glu Thr Arg Glu Met Val Ala
50 55 60

Ile Lys Lys Ile Ala Asn Cys Asp Leu Lys Ile Cys Asp Phe Gly Leu
65 70 75 80

Ala Arg Pro Ser Ser Glu Ser Asp Met Met Thr Glu Tyr Val Val Thr
85 90 95

Arg Trp Tyr Arg Ala Pro Glu Leu Leu Leu Asn Ser Thr Asp Tyr Ser
100 105 110

Ala Ala Ile Asp Val Trp Ser Val Gly Cys Ile Phe Met Glu Leu Ile
115 120 125

Asn Arg Gln Pro Leu Phe Pro Gly Arg Asp His Met His Gln Met Arg
130 135 140

Leu Ile Thr Glu Val Ile Gly Thr Pro Thr Asp Asp Glu Leu Gly Phe
145 150 155 160

Ile Arg Asn Glu Asp Ala Arg Lys Tyr Met Arg His Leu Pro Gln Tyr
165 170 175

Pro Arg Arg Thr Phe Ala Ser Met Phe Pro Arg Val Gln Pro Ala Ala
180 185 190

Leu Asp Leu Ile Glu Arg Met Leu Thr Phe Asn Pro Leu Gln Arg Ile
195 200 205

Thr Val Glu Glu Ala Leu Asp His Pro Tyr Leu Glu Arg Leu His Asp

MAPK5.ST25

210	215	220
Ile Ala Asp Glu Pro Ile Cys Leu Glu Pro Phe Ser Phe Asp Phe Glu		
225	230	235 240
Gln Lys Ala Leu Asn Glu Asp Gln Met Lys Gln Leu Ile Phe Asn Glu		
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Ala Ile Glu Met Asn Pro Asn Ile Arg Tyr		
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<211> 25
<212> DNA
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<220>
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<220>

<223> gene-specific primer containing restriction site

<400> 8

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20